

ABSTRACT

SYNTHESIS METHOD FOR AN ACTIVE POLYPHASE FILTER

[0025] A fully-integrated continuous-time active complex bandpass IF filter that may contain transmission zeros yielding much sharper roll-off than that of an all-pole filter is implemented using transconductors and capacitors only. Each of the filter second-Order sections realizes a pair of complex poles and a may realize a double imaginary axis zero. Since the transconductors are electronically tunable the positions of filter zeros and poles are adjustable using an automatic tuning system. In each filter section the value of different transconductors are modified to separately change the pole frequency, its Q-factor and the zero frequency. Each pole and zero are separately tuned, which achieves a higher level of tuning accuracy than in case where all poles and zeros were adjusted simultaneously.